FORYON TC55H, TC5510H, TC5520H, TC5530H, TC5540H

FORYON CNC Lathe Controller User Manual

Models: TC55H, TC5510H, TC5520H, TC5530H, TC5540H

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of the FORYON CNC Lathe Controller series, including models TC55H, TC5510H, TC5520H, TC5530H, and TC5540H. This controller is designed for precision machining applications, offering reliable control and ease of use.

The controller integrates a human-computer interface for intuitive interaction and code analysis. An FPGA provides the underlying algorithms and generates control pulses, ensuring stable and precise operation. The internal operating system is robust and user-friendly.



Figure 1: Front view of the FORYON CNC Lathe Controller, showcasing its display and control panel.

2. Applications

The FORYON CNC Lathe Controller is versatile and can be utilized across various CNC machine types. Its robust design and flexible programming capabilities make it suitable for:

- Lathes
- CNC Routers
- Pick & Place machines
- Milling Machines
- Other turning and cutting applications



Figure 2: Side profile of the FORYON CNC Lathe Controller, highlighting its ventilation and compact form factor.

3. Setup and Installation

3.1. Power Supply Requirements

The controller requires a **24VDC** power supply. Ensure the power source is stable and provides sufficient current for the controller and connected motors (Servo and Stepper motors are supported).

3.2. Wiring Connections

Connect the controller to your CNC machine's motors and I/O devices according to the wiring diagram provided in the

separate installation guide. The I/O ports are self-definable, allowing for flexible integration with various machine configurations.

3.3. Initial Configuration

Upon first power-up, the controller may require initial configuration. Refer to the on-screen prompts and the detailed configuration section in the full technical manual for setting up axis parameters, motor types, and limit switches.

4. Operating Instructions

4.1. User Interface and Navigation

The controller features a humanized interface design for convenient operation. Commands can be input via the touch screen or keyboard. Processing parameters and programs are intuitively set.



Figure 3: Front view of the FORYON CNC Lathe Controller with the display off, illustrating the button layout and overall design.

4.2. Programming Methods

The primary programming methods supported are **G-code** and **M-code**. Advanced controllers may also support graphical programming, simplifying the programming process.

4.3. High Precision Machining

The FORYON CNC Lathe Controller enables high-precision machining through advanced digital control technology. It

precisely controls the position and speed of the machining process, ensuring accuracy and consistency of dimensions. Error compensation functions further enhance machining accuracy.

5. Maintenance

Regular maintenance ensures the longevity and optimal performance of your FORYON CNC Lathe Controller.

- **Cleaning:** Keep the controller's exterior clean and free from dust and debris. Use a soft, dry cloth. Avoid liquid cleaners directly on the screen or buttons.
- **Ventilation:** Ensure proper airflow around the unit. Do not block ventilation slots to prevent overheating.
- **Cable Inspection:** Periodically check all wiring connections for looseness or damage. Secure any loose connections.
- **Software Updates:** Check the manufacturer's website for any available firmware or software updates to ensure the controller operates with the latest features and bug fixes.

6. Troubleshooting

This section addresses common issues you might encounter with your FORYON CNC Lathe Controller.

Problem	Possible Cause	Solution
Controller does not power on.	No power supply; incorrect voltage; faulty cable.	Verify 24VDC power supply connection. Check power cable for damage. Ensure power outlet is functional.
Motors not responding.	Loose motor connections; incorrect motor settings; emergency stop engaged.	Check motor wiring. Review motor configuration in settings. Disengage emergency stop.
Display is blank or flickering.	Loose display cable; power issue; hardware malfunction.	Reseat display cables. Check power supply stability. If problem persists, contact support.

For issues not listed here, please refer to the comprehensive troubleshooting guide in the full technical manual or contact FORYON customer support.

7. Specifications

Feature	Detail
Brand	FORYON
Model Numbers	TC55H, TC5510H, TC5520H, TC5530H, TC5540H
Application	Lathe and Turning Center

Feature	Detail
Power Supply	24VDC
Programming Method	G code, M code
I/O	Self Definition
Motor Compatibility	Servo and Stepper
Package Dimensions	1.18 x 0.79 x 0.39 inches
Item Weight	17.64 pounds (8000 Grams)
Country of Origin	China

8. Warranty and Support

8.1. Warranty Information

FORYON products are manufactured to high standards. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official FORYON website. Keep your purchase receipt as proof of purchase.

8.2. Customer Support

If you require technical assistance, have questions about operation, or need to report an issue, please contact FORYON customer support. Contact details can typically be found on the product packaging, the official FORYON website, or through your point of purchase.
When contacting support, please have your product model number (TC55H, TC5510H, TC5520H, TC5530H, TC5540H) and a detailed description of the issue ready.

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Example: How do I reset this device or fix this error?

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